

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-35 (Withdrawn).

Claim 36. (Original) A method of forming a lightweight well treatment fluid for use in a subterranean formation comprising the steps of: mixing an aqueous fluid, a surfactant, and a gas generating chemical, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of a water component in the aqueous fluid, to form a well treatment fluid; and allowing the gas generating chemical to react so as to generate a gas in the well treatment fluid to form a lightweight well treatment fluid.

Claim 37. (Original) The method of claim 36 further comprising using a gas production rate enhancing agent to increase the rate the gas is generated in the well treatment fluid.

Claim 38. (Original) The method of claim 37 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.

Claim 39. (Original) The method of claim 36 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.

Claim 40. (Original) The method of claim 36 wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.

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Claim 41. (Original) The method of claim 36 wherein the surfactant comprises a mixture of a foaming and a foam stabilizing surfactant.

Claim 42. (Original) The method of claim 36 wherein the surfactant comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.

Claims 43-112 (Withdrawn).

Claim 113. (New) A method for treating a subterranean formation, comprising: providing a mixture of an aqueous fluid, a surfactant, and a gas generating chemical, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of a water component in the aqueous fluid, to form a well treatment fluid; allowing the gas generating chemical to react so as to generate a gas in the well treatment fluid to form a lightweight well treatment fluid; and using the lightweight well treatment fluid to treat a subterranean formation.

Claim 114. (New) The method of claim 113, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises using the lightweight well treatment fluid to reduce the permeability of the formation.

Claim 115. (New) The method of claim 113, wherein the lightweight well treatment fluid further comprises an acid component that comprises at least one of the following: hydrochloric acid, hydrofluoric acid, fluoroboric acid, formic acid, acetic acid, citric acid, lactic acid, thioglycolic acid, glycolic acid, or a mixture thereof.

Claim 116. (New) The method of claim 115, wherein the acid component is present in the lightweight well treatment fluid in an amount up to about 30% by weight of the lightweight well treatment fluid.

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Claim 117. (New) The method of claim 115, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises contacting the lightweight well treatment fluid with a spent acid resident in the formation, to thereby enhance recovery of the spent acid from the formation.

Claim 118. (New) The method of claim 117, wherein the spent acid results from an acid stimulation treatment in the formation.

Claim 119. (New) The method of claim 113, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises using the lightweight well treatment fluid to drill a well bore in the formation.

Claim 120. (New) The method of claim 120, wherein the lightweight well treatment fluid does not comprise a surfactant.

Claim 121. (New) The method of claim 113, wherein the aqueous fluid comprises an activator that comprises at least one of the following: a base, a buffer, or an oxidizer.

Claim 122. (New) The method of claim 113, wherein the generated gas is generated in the lightweight well treatment fluid while the lightweight well treatment fluid is being used to treat the subterranean formation.

Claim 123. (New) The method of claim 113, wherein the generated gas comprises at least one of the following: nitrogen, ammonia, carbon dioxide, or carbon monoxide.